

KOSTRYUKOVA, K.Yu.; ERNITSKAYA, G.K.

Does the further development of embryology confirm S.G. Kavashin's theory of the independent motion of male gametes in angiosperms. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 11 no.9:7-24 S '58. (MIRA 11:12)

1.Kafedra biologii Kiyevskogo meditsinskogo instituta. Botanicheskii sad imeni A.V. Fenina.
(Fertilisation of plants) (Lilies)

ACCESSION NR: AR4042179

S/0272/64/000/005/0183/0183

SOURCE: Ref. zh. Metrologiya i izmerit. tekhn. Otd. vy'p., Abs. 5.32.1171

AUTHOR: Benetskiy, B. A.

TITLE: Characteristics of mixed organic crystals for use in scintillation spectrometry

CITED SOURCE: Sb. Stsintillyatory° i stsintillyats. materialy°. Khar'kov, Khar'kovsk. un-t, 1963, 151

TOPIC TAGS: organic crystal, impulse amplitude, scintillation spectrometry, spectrometry

TRANSLATION: Properties of mixed organic crystals are investigated for the purpose of clarification of their spectrometric and time characteristics for use in gamma- and neutron spectrometry. Relative (as compared to stilbene) amplitudes of impulses from scintillations excited by gamma-rays and neutrons of various energies and times of de-excitation are investigated (see Enclosure 1). Impulse amplitude

Card

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ACCESSION NR: AR4042179

is linear relative to change of energy of gamma-radiation. During excitation of scintillations by protons, judging by the form of the spectrum of recoil protons from 14 Mev neutrons, nonlinearity is approximately the same as for stilbene. All samples are identical in spectrometric properties and have amplitude resolution for the spectrum of recoil protons from the monochromatic line of 14 Mev neutrons equal to 7%. Accuracy of measurements is 25-30%.

SUB CODE: 88, OP

ENCL: 01

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2/3

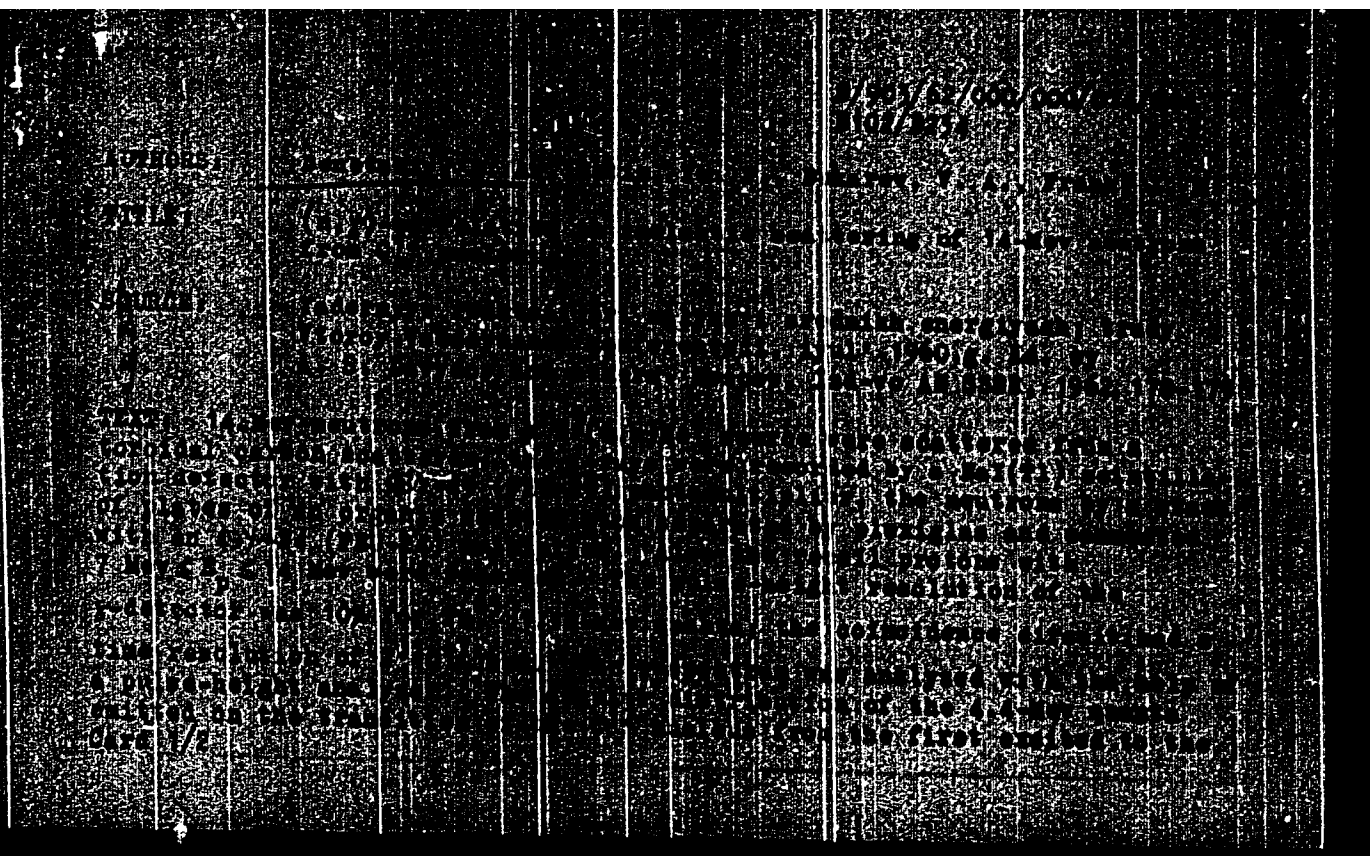
ACCESSION NR: AR4042179

ENCLOSURE: 01

Name of crystal	Impulse amplitude relative to stilbene, %	Time of de-excitation relative to time of de-excitation of stilbene, %
Naphthalene with anthranilic acid	80	50
Naphthalene with diphenyl butadiene	95	70
Naphthalene with diphenyl hexatriene	109	82

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(17) 7-CONCERNION

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S/056/63/044/002/009/065
B102/B186

AUTHORS: Benetskiy, B. A., Frank, I. M.

TITLE: Investigation of the angular correlation between γ -photons and 14-Mev neutrons inelastically scattered from carbon nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 2, 1963, 454-461

TEXT: The possibilities of $n'\gamma$ angular correlations are discussed in order to obtain an unambiguous answer to the question as to whether the process $C^{12}(n,n'\gamma)C^{12}$ occurs via compound nucleus formation or via direct interaction. It is found that in the latter case a state of definite parity (2^+) will result and the distribution will be symmetrical with respect to $(\psi_n - \pi)/2$, i.e. the correlation will be characterized by $\sin^2 2(\theta_\gamma - \psi_n/2 - n\pi/4)$. The $n'\gamma$ correlation was measured in a simple arrangement: the neutrons were obtained from a DT source ($E_n = 14.2$ Mev);

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Investigation of the angular ...

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the γ -rays were detected by a NaI(Tl) crystal ($2 \cdot 10^{-7}$ sec) connected with an FEU-29 (FEU-29) photomultiplier; the neutron detector ($4 \cdot 10^{-9}$ sec) was provided with an FEU-24. The coincidence between 4.43-Mev γ -quanta ($2^+ \rightarrow 0^+$ transition) and the neutrons scattered through a certain angle was recorded by scintillation counters. The target was a graphite cylinder 15 cm high and 6.5 cm thick. The γ -ray angular distributions were measured in the n - n' plane for the fixed n' emission angles 40 and 135° . They can be described by $I(\theta_\gamma) = 1 + b \sin^2(\theta_\gamma - \theta_0)$ where b and θ_0 were calculated by the method of least squares. The scattering cross-section ratio was $\sigma(40^\circ)/\sigma(135^\circ) = 1.8 \pm 0.4$. When the results obtained for neutrons are compared with the analogous ones for protons it can be seen that for small angles the scattering mechanism depends only slightly on the nature of the nucleon, but for large angles the results obtained for neutrons differ from those for protons. It cannot yet be decided if the direct scattering mechanism is always contributed by another mechanism nor to what extent this occurs. For large scattering angles this contribution will be very important. There are 6 figures and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

Card 2/11

BENETSKIY, B.A.; BETIN, Yu.P.; GONZATKO, Ya.

Inelastic scattering of 14 Mev. neutrons on Mg^{24} . Zhur. eksp. i
teor. fiz. 45 no.4:927-931 0 '63. (MIRA 16:11)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.

L 1976-66 FWT(m)/T/ERA(m)-2

ACCESSION NR: AT9018594

UR/2704/62/053/000/0123/0157

AUTHOR: Bumatskiy, E. A. 44.5

TITLE: Investigation of the inelastic scattering of 14-Mev neutrons by nuclei of low and medium weight 19.41.5 59 35 8+1

SOURCE: AN SSSR. Fizicheskii institut. Trudy, v. 33, 1965. Issledovaniye atomnykh yad i pomechayemykh sverkhchastits i naytronov (Investigation of the atomic nucleus using charged particles and neutrons), 123-157

TOPIC TAGS: inelastic scattering, scattering cross section, carbon, iron, magnesium, aluminum, silicon, deuteron scattering, triton bombardment, neutron bombardment

ABSTRACT: This article reports new investigations and reviews the experimental investigations of inelastic scattering of neutrons by light and medium nuclei, specifically those dealing with the angular (n') correlations in C^{12} and Fe^{56} and with the nuclear levels excited when 14-Mev neutrons are scattered by Ng^{24} , Al^{27} , Si^{28} , and Fe^{56} . The 14-Mev neutrons were produced by the $T^2(d,n)He^4$ reaction, using deuterons accelerated to 150 mev by a cascade generator. The apparatus used for the registration of the (n') coincidences is illustrated in Fig. 1 of the Enclosure. The apparatus and the procedure are described in detail. In the case

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L 1976-66

ACCESSION NO: A7018794

of small-angle scattering from C^{12} the results agree with the predictions of the direct-interaction theory and with the data on the angular $(p'\gamma)$ correlations in the process $C^{12}(p,p'\gamma)C^{12}$. In the case of large-angle scattering, the results are in line with those of J. Rasmussen et al. (Direct Interaction and Resonance Reaction Mechanisms, Gordon and Breach, 1968, p. 621). This offers further evidence of the predominance of the direct interactions. In the case of the $Fe^{56}(n,\gamma)$ excitation, transitions were observed from several levels simultaneously, both direct and via γ cascades, so that comparison with any theoretical calculations is impossible. The article describes also a method of measuring the cross sections that characterize the excitation of individual γ transitions in the inelastic scattering of fast neutrons by metals, using comparison with the cross section of the (n,p) reaction with the same nucleus. The cross sections for inelastic scattering of neutrons by Fe^{56} , Al^{27} , S^{32} , and Fe^{58} were measured by this method and compared with those others. Reasons for deviations from the results by others are discussed in detail. Analysis of the total inelastic-scattering cross sections and of the cross sections of all possible reactions indicates that in the case of the investigated metals the total (direct and via γ -cascades) cross section for the excitation of the first-excited 2^+ level is close to the value of the cross section for inelastic scattering of the neutrons with excitation of all the levels of the target.

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ACCESSION NR: AT9018794

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nucleus. An analysis of all the data points to the existence of a relatively simple connection between the total cross section for the inelastic scattering of fast neutrons and the quadrupole moment of the target nucleus. "The author thanks his guidance chairman I. M. Frenkel, and also Yu. P. Krut'ko, V. A. Babarev, and G. S. Buzik and D. B. Kuznetsov, who helped with the work. He also thanks the laboratory staff of FIAN (Physics Institute, AN SSSR) for help and discussions, and G. S. Buzik of the Institut Kristallografi (Institute of Crystallography), AN SSSR for help in the development of the neutron detector." (Orig. art. has: 30 figures, 17 formulas, and 4 tables.

ASSOCIATION: Fizicheskii Institut AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00

ENC: 01

SUB CODE: NP

NR REF SOV: 029

OTHER: 055

Card 3/4

L 1075-66
ACCESSION NO: AR5018594

ENCLOSURE: 01

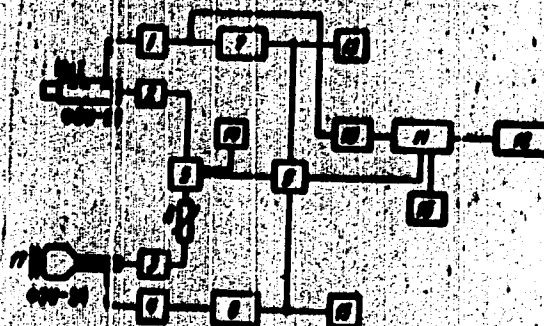


Fig. 1. Block diagram of apparatus for the registration of (n,γ) coincidences.

1-4 - Cathode followers, 5 - fast double coincidence circuit, 6 - delay line, 7, 8 - proportional amplifier, 9 - triple coincidence circuit, 10 - proportional amplifier, 11 - gate, 12 - pulse height analyzer, 13-16 scalars, 17 - neutron detector, γ - photomultiplier

Card 4/4

L 36404-66 ENT(m)/EWP(j) RM

ACC NR: AP6018774

SOURCE CODE: UR/0070/66/011/003/0439/0442

AUTHOR: Belikova, G. S.; Belyayev, L. M.; Benetskiy, B. A.

ORG: Institute of Crystallography im. P. N. Lebedev, AN SSSR (Institut kristallografi AN SSSR); Physics Institute (Fizicheskiy institut)

TITLE: Deuteration of organic crystals for scintillation spectrometry by fast neutrons

SOURCE: Kristallografiya, v. 11, no. 3, 1966, 439-442

TOPIC TAGS: ~~anthranilic acid, single crystal, scintillation, luminescence spectrum, fast neutron, *organic crystal*~~

ABSTRACT: The characteristics of mixed single crystals of octadeuteronaphtalene containing 81.7 and 94.3 at % deuterium, were studied. Mixtures were made by melting the single crystals with 0.7 wt % anthranilic acid--the optimum content for naphtalene scintillation. The isotope interchange between the molecules of anthranilic acid and octadeuteronaphtalene was indicated by luminescence spectra and scintillation spectrometry. Luminescence spectra of pure and mixed crystals were obtained using a mercury lamp with a filter ($\lambda=313 \text{ m}\mu$). The spectra were different from naphtalene due to an isotopic increase in levels resulting from the substitution of hydrogen by deuterium. The scintillating properties were measured by the secondary frequency spectra of γ -

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UDC: 548.5 : 539.107.43

L 36404-66

ACC NR: AP6018774

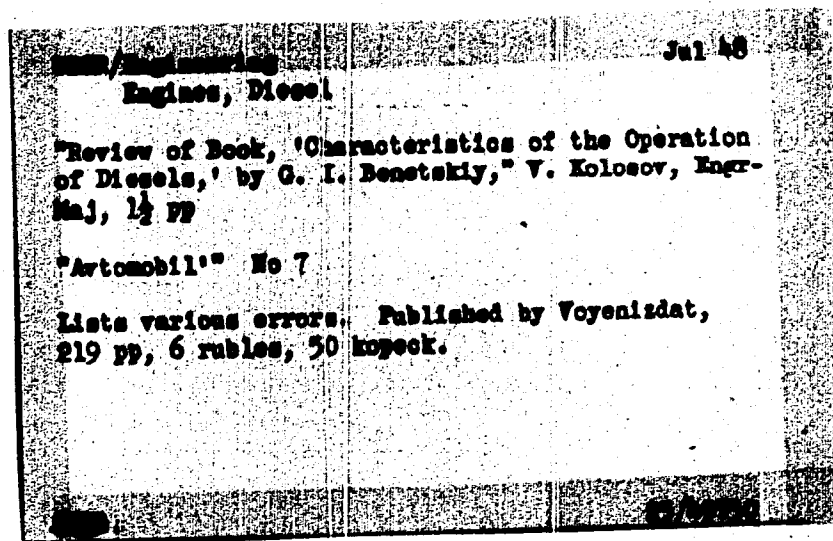
-quanta after bombardment by 14 Mev neutrons. Mixed naphthalene was compared with mixed octaneutronaphthalene by this method. Maxima were observed in the spectra of octaneutronaphthalene crystals at a channel number of 25, as a result of the neutron energy. These crystals could serve as a new class of organic scintillators for neutron spectrometers in the megavolt region. Such crystals could be produced industrially in diameters of 200 mm from which various scintillator shapes can be fashioned. Other favorable aspects of these crystals such as light yield and inelastic dispersion by fast neutrons were discussed. The authors thanked I. M. Frank for participation in useful discussions and A. A. Samokhov for providing samples of the various materials. Orig. art. has: 2 figures.

SUB CODE: 18;20 SUBN DATE: 21Jun65/ ORIG REF: 006/ OTH REF: 003

Card 2/2/11/LP

BENETSKIY, G.I.

PA 23/49T30



BENEV, B.

BENEV, B. Amateur wire recorders. p. 38. Vol. 5, no. 8, 1956 ELEKTROENERGIJA.
Sofia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol 6, No. 4--April 1957

MIREV, D., prof. d-r (deceased); RUSCHEV, D.; HENEV, B.

Mixed metallurgic coke made from black and brown coals. Khim
i industriia 34 no.5:163-167 '62

BENEV, Benko, st. ikonomist

Problems of technical progress in 1964. Nauka i tekhnolozhiya
16 no. 2:1-3 F '64.

1. State Committee for Science and Technical Progress.

RENEVOLENSKAYA, G.V.; KHEL'TSNV, V.V.

Studying the thermal decomposition of hydrocarbons on the
surface of porous catalysts. Trudy VNIIGAZ no.3:116-129 '58.
(Hydrocarbons) (Catalysts) (NINA 11:8)

BENEVOLENSKAYA, G.V.; KEL'TSEV, V.V.

Producing hydrogen by the thermal decomposition of natural gas
on a porous contact surface in a batch-type pilot plant.

Trudy VNIIGAZ no.6:88-97 '59.

(MIRA 12:10)

(Hydrogen) (Gas, Natural)

KEL'TSEV, V.V.; VIKOVA, N.I.; BEREZOLSKAYA, G.V.

Investigating the thermal decomposition of methane on the surface
of iron ore. Gaz. prom. 3 no.4:43-49 '63. (MIRA 17:10)

BENEVOLENSKAYA, G.V.; KEL'TSEV, V.V.

Studying the rate of thermal decomposition of methane on the surface
of porous catalysts. Trudy VNIIGAZ no.12:71-90 '61. (MIRA 15:1)
(Methane) (Catalysts)

BENEVOLENSKAYA, G.V.; KEL'TSEV, V.V.

Speed of the thermal decomposition of methane on the surface
of iron ore. Gaz.prom. 10 no.2:32-36 '65.

(MIRA 18:12)

KIL'DISHOVA, O.V.; LIN'KOVA, N.G.; KHEVCHENSKAYA, I.L.

Conversions of mercapto amine acids. Part II. α, γ -substituted-
- α -acylamino-carboxylic acids. Izv. AN SSSR Otd. Khim. Nauk no. 7:834-
842 J1 '56. (MLA 9:10)

1. Institut elementeorganicheskikh soedineniy Akademii Nauk SSSR.
(Acids, Fatty)

KUZNETSOVA, G.G. - BAKHTURASHVILI, L.L.

Prolonged action properties of the antibiotic bacillin-5.
Trudy TSIL 10:87-89 '66. (MIRA 18:11)

BENEVOLENSKAYA, L.I.

Electrophoretic investigation on agar gel of the protein composition
of the blood of normal children and in chronic nutritional disorders.
Pediatria 38 no. 3:59-63 M: '60. (MIRA 14:1)

(BLOOD PROTEINS) (INFANTS—NUTRITION)

HEHEVOLENSKAYA, N., mladshiy nauchnyy sotrudnik

Drinking regime in foundry shops. Okhr.truda i sots.strakh
3 no.2:29 F '60. (MIRA 13:6)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva
Sibirskogo otdeleniya Akademii nauk SSSR.
(Founding--Hygienic aspects)

BENEVOLENSKAYA, N.P.

Working conditions of machinists of mine electric locomotives.

Ugol' 38 no.3:58 Mr '63.

(MIRA 18:3)

1. Institut gornogo dela Sibirskogo otdeleniya AN SSSR.

BENEVOLENSKAYA, N.P.

Mechanize the transportation of workers in Kuznetsk Basin mines.
Bezop. truda v prom. 7 no.12:7-8 D '63.

(MIRA 18:7)

1. Institut gornogo dela Sibirskogo otdeleniya AN SSSR.

la

1/C

The effect of carcinogenic substances on rat tissue cultures. A. D. Timokhovskii and S. V. Benetovskaya. Izv. vuz. biol. (U. S. S. R.) 26, No. 8, 20-21 (in English, 1983) (USSR). - Consists of 1,2,3,4-dibenzanthracene of 1-1000-1, 1000 allow normal growth of embryonic rat tissue, blood leucocytes and bone marrow cultures of adult rats for 1 month, after which gradual cell degeneration sets in. Methylcholanthrene (1) and 3,4-benzopyrene are much more toxic and cons. of 1-10, 100-1 200, 100 cause culture degeneration after a latent period varying from several days to 1 month. Cons. of 1-100, 100-1 1, 100, 100 maintain the life of the culture for 2-3 months, after which weakening and culture degeneration set in. No stimulating action on the growth of the cultures was observed. Subcutaneous inoculation into 4 rats of cultures raised in 1 for 1.5-2 months and then for 13-20 days in a normal medium gave neg. results.

S. A. Kaznina

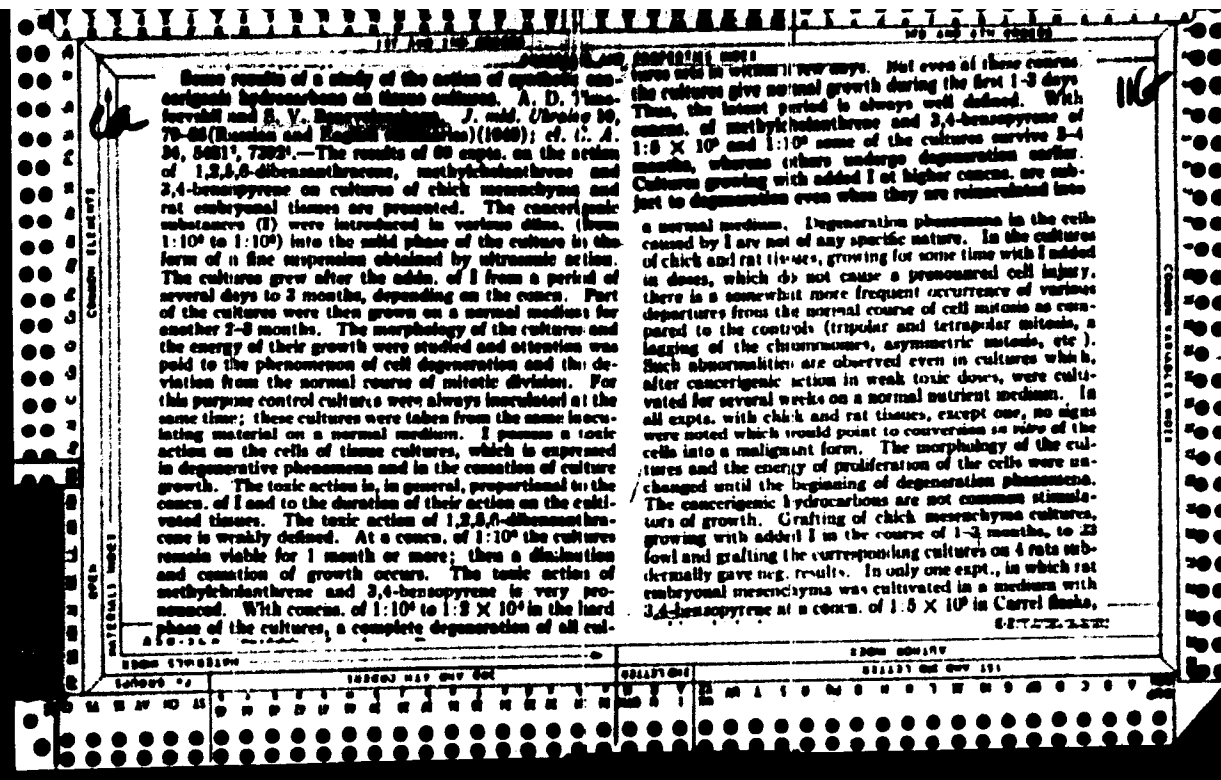
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

BOOK SYMBOL

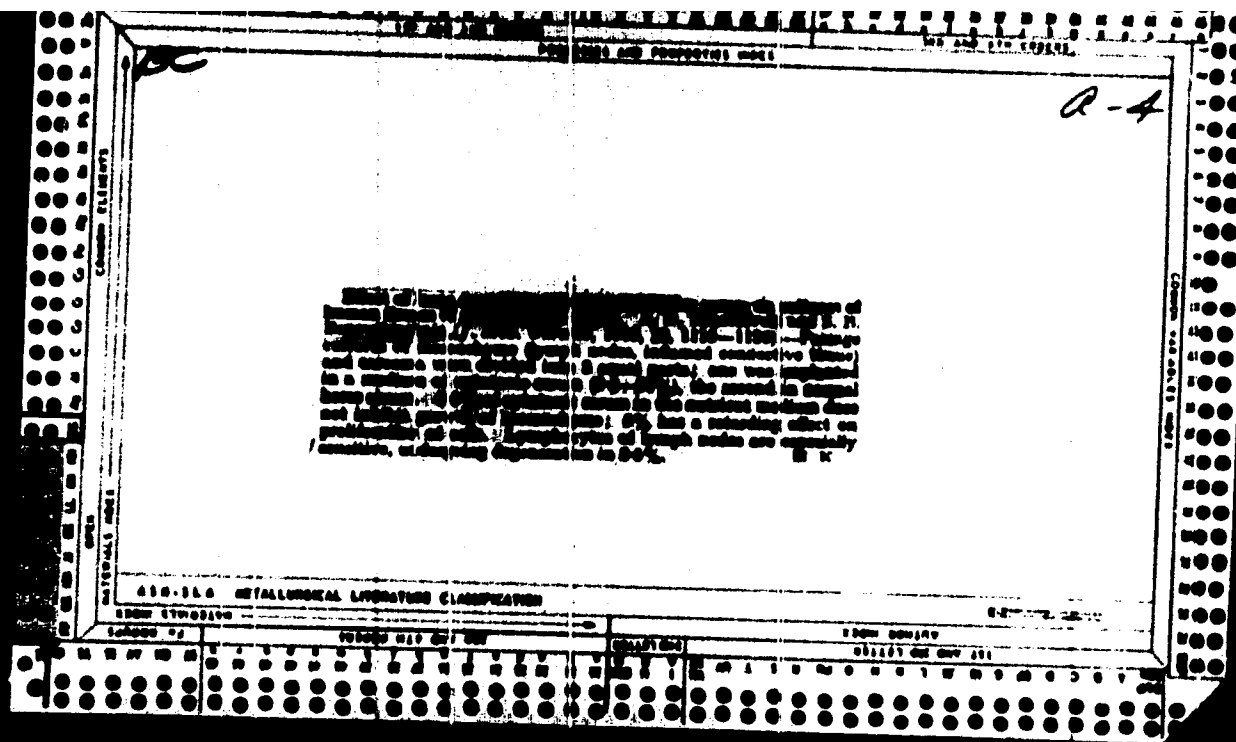
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...the appearance of the culture from which differed in morphology from the 7th day... cultures could be rapidly reproduced; in 2 months almost... cultures containing of homogeneous cells with new... properties were obtained. In contrast to the typical... of the culture, the altered cells had a distinctly... protoplasm, densely stained by basic dyes, and... nuclei, rich in chromatin, with a thick nuclear... membrane wall. It may then be assumed that, under... of 2,4-dinitrophenol, a new race of cells... It would, however, be premature to state that... of the cells to a malignant type occurred here. Grafting such cultures subcutaneously on the backs of 16... rats (1-10 cultures on each animal) gave neg. re-... Even these neg. results cannot, however, be con- sidered an inhibitive indication that no conversion of the cells to a malignant form occurred. R. Berggren



CA

Action of carcinogenic hydrocarbons on tissue differentiation in explants. S. V. Degtyareva (Acad. Sci. USSR, M.S.U., Kiev). *Izv. Akad. Nauk. Ukr. SSR*, 1967, No. 2, 14-21 (1967).—Methylcholanthrene and benzopyrene in 1:100,000 to 1:1,000,000 concentrations studied as to effects of these differentiation in explants of hen embryo, human leukocytes, and striped muscle from newborn animals showed that in the 1st specimens cartilage formation took place with 1:100,000 and 1:300,000 concns. Leucocyte cultures (normal and leukemic) displayed no retardation of development of macrophages, fibroblastoid cells or myelocytes from nongranular leukocytes. Muscle explants showed increased development of myotubules; in long explants with highest dilns. of benzopyrene no developmental or growth changes were observed and no malignization took place even after 1-3 month exposure, followed by 7 months of carcinogen-free medium. Neither hydrocarbon prevents development of argyrophilic fibers in the chick tissue cultures. (J. M. Kinschiff)

BENEVOLENSKAYA, S. V.

USSR/Medicine - Hematology
Medicine - Leukemia

May/Jun 47

"Lymphocyte, Monocyte and Myelocyte of Normal and Leukemic Blood of Man in Explanates,"
A. D. Timofeyevskiy, S. V. Benevolenskaya, 9 pp

"Arkhir Patologii" Vol IX, No 3

General discussion, illustrated with microphotographs, of development of lymphoid
cells into eosinophiles, etc.

PA 11T99

BENEVOLENS'KAYA, S. V.

TIMOFEYEV'S'KIY, O.D.; ~~BENEVOLENS'KAYA, S.V.~~^{Ya.}, starshty naukoviy spivrobitnik

Effect of antitreticular cytotoxic serum on leucocyte cultures in human blood. Medych.shur. 16:74-82 '47. (MIRA 10:12)

1. Z laboratorii eksplanta'tsii tkanini (zav. - chlen-kor. AN URSR. O.D.Timofeyevs'kiy) Institutu klinichnoi fiziologii AN URSR (direktor - akad. O.O.Bogomolets' [deceased]). 2. Chlen-korespondent AN URSR (for Timofeyevs'kiy).
(SERUM) (LEUCOCYTES)

11-5

CA

An attempt at malignant transformation of connective tissue of mice *in vitro*. Z. V. Benevolenskaya. *Izvestiya Akad. Nauk SSSR Ser. Biol.* 1979, No. 5, 7-10 (1979); *Engl. transl. in J. Natl. Cancer Inst.* 67:1019-20, 1979; cf. *CA* 44: 6230. Fragments of muscle and connective tissue of newborn Strong A high-breast-cancer strain mice were grown on a medium (whose composition is described) with and without 1:1,250,000 methylnanthrene (I). After 5-6 transfers, at intervals of 15-20 days, all tissues were grown in a absence of I. After 40 days on medium without I, the cells of tissues previously treated with I grew more rapidly while the controls (never treated with I) grew more slowly and finally ceased growth after 170 days. One of 4 mice receiving transplants of tissues 3 months on

medium without I, and previously treated with I, developed a sarcoma, which was successfully transplanted to other Strong A strain mice. W. C. Tolue

RENEVOLENS'KA, S. V.

TIMOFEEVS'KIY, O.D.; RENEVOLENS'KA, S.V.

Anaplasia and differentiation phenomena in explants of animal
neoplasms. Medych.shur. 19 no.1:3-21 '49. (MIRA 10:12)

1. Z viddilu eksplantatsii tkanin Institutu klinichnoi fiziologii im.
akad. O.O.Bogomol'tsa AN URSS (direktor Institutu - chlen-kor. AN
URSS prof. P.Ye. Kavetskiy).
(CANCER)

(Benevolens' Kaya, S.V.)

TIMOFEYEV'S'KIY, O.D.; BENEVOLENS' KAYA, S.V., st.nauk.spivr.

Inducing malignant growth in connective tissue cultures. Medych.
shur. 20 no.2:18-23 '50. (MIRA 11:1)

1. Z viddilu eksplantatsii tkanini (sav. viddilu - diya. ch. AMN
SRSR O.D.Timofeyeva's'kiy) Institutu klinichnoi fiziologii im. akad.
O.O.Bogomol'tsa Akademii nauk URSS (direktor - chl-kor. AN URSS
R.Ye.Kavets'kiy)
(CNCER) (CHOLANTHRENE)

BENEVOLENS'KAYA S. V.

TIMOFEEV'S'KIY, O.D., prof.; ~~BENEVOLENS'KAYA~~ S.V., st.nauk.spivbor.

Effect of methylcholanthrene on long-term cultures of neuroectodermal and epidermal tissue. Medych.zhur. 21 no.3:16-20 '51. (MIRA 11:1)

1. Z viddilu eksplantatsii tkanin (sav. - diysniy chlen AMN SSSR prof. O.D.Timofeyeva'kiy) Institut klinichnoi fiziologii im. akad. O.O.Bogomol'tsYa NA URSR (direktor - diysniy chlen AN URSR P.Ye. Kavits'kiy)

(CHOLANTHRENE) (TISSUE CULTURE) (CANCER)

BE NEVOLENS' KAP S.V.

BE NEVOLENS' KAP S.V., St.nauk.spivrob., kand.med.nauk

Combined effect of methylocholanthrene and the "Milk factor" on tissue culture. Medych.shur. 21 no.3:21-26 '51. (MIRA 11:1)

1. Z viddilu eksplantatsii tkani (zav. - diysniy chlen AMN SRSR, prof. O.D.Timofeyevs'kiy) Institutu klinichnoi fiziologii im. sknd. O.O.Bogomol'tsa Akademii nauk URSS (direktor - diysniy chlen AN URSS R.Ye.Kavets'kiy)
(CHOLANTHERENE) (CANCER) (TISSUE CULTURE)

BERNVOLENSKAYA, S.V., kandidat meditsinskikh nauk

Results of infection of cultures of leukocytes and connective tissue with chicken sarcoma viruses. Trudy AN SSSR 21 no.4:109-116 '52.

(MIRA 10:8)

1. Iz otdela eksplantatsii tkaney (sav. - deystvitel'nyy chlen AN SSSR A.D.Timofeyevskiy) Instituta klinicheskoy fiziologii im. akademika A.A.Bogomol'tsa AN USSR (dir. - chlen-korrespondent AN USSR R.Ye.Kavetskiy)

(SARCOMA, experimental,

Rous sarcoma virus, infect. of connective tissue & leukocyte cultures)

(NEOPLASMS, experimental,

Rous sarcoma virus, infect. of connective tissue & leukocyte cultures)

(TISSUE CULTURE,

connective tissue & leukocytes, Rous sarcoma virus infect.)

(LEUCOCYTES,

Rous sarcoma virus infect. of leukocyte cultures)

(CONNECTIVE TISSUE,

Rous sarcoma virus infect. of tissue culture)

TYMOFYEYEV'S'KYY, O.D.; HENEVOLINS'KA, S.V.

Rendering explantations of embryonic mesenchyma of chicks malignant by means
of the nucleoprotein of the chick sarcoma. Medych.shur. 22 no.4:16-19 '52.
(MIRA 6:10)

1. Instytut klinichnoyi fiziologii im. akad. O.O.Bohomol'tsya AN USSR.
(Tumors)

TIMOFEYEVSKIY, A.D., ~~duyevitel'nyy~~ chlen Akademii meditsinskikh nauk SSSR, ~~so-~~
~~duyushchiy~~; ~~BOGOMOL'TSA, S.V.~~; VOROB'YEV, A.M., chlen-korrespondent Aka-
demii nauk SSSR, direktor.

Malignisation of connective tissue in rat explants. Arkh.pat. 15 no.3:15-
22 My-Je '53. (MLBA 6:11)

1. Otdel eksplantatsii tkanykh Instituta klinicheskoy fiziologii im. akad.
A.A.Bogomol'tsa (for Timofeyevskiy and Benovolenskaya). 2. Institut kli-
nicheskoy fiziologii im. akad. A.A.Bogomol'tsa Akademii nauk SSSR (for
Vorob'yev). 3. Akademiya meditsinskikh nauk SSSR (for Timofeyevskiy).
(Connective tissues) (Tumors)

TIMOFEEVSKIY, O.D.; ~~REDACTED~~, S.V.

Problem of malignancy in tissue cultures. *Viestk AN USSR* 26 no.3:
34-40 Nr 155. (MIRA 8:5)
(Tumors) (Tissue culture)

BENEVOLENSKAYA, S.V.

Morphological changes in a culture of rat fibroblasts in the
presence of milk factor and methylcholanthrene. Vop.onk. 5
no.10:401-406 '59. (MIRA 13:12)
(CHOLANTHRENE) (TUMORS)
(TISSUE CULTURE)

BENEVOLENSKAYA, S.V.

Malignant degeneration of rat fibroblasts in tissue cultures.

Vop. onk. 6 no. 8:3-9 Ag '60.

(MIRA 14:1)

(CONNECTIVE TISSUES—CANCER)

BENEVOLENSKAYA, S.V.; CHERNYSHOVA, G.T.; RAMONOVA-TSKHOVREBOVA, O.D.

Monostratal leukocyte cultures of human leukemic blood. Probl. gemat. i perel. krovi no.5:37-42. '65. (MIRA 18:10)

1. Laboratoriya kul'tivirovaniya tkaney (zav.- deystvitel'nyy chlen AMN SSSR prof. A.D. Timofeyevskiy) Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR (dir.- deystvitel'nyy chlen AMN SSSR prof. N.N. Blokhin) i gematologicheskaya klinika (zav.- prof. M.S. Dul'tsin) TSentral'nogo ordana Lenina instituta gematologii i perelivaniya krovi (dir.- dotsent A.Ye. Kiselev) Ministerstva zdravookhraneniya SSSR, Moskva.

SOURCE CODE: UR/0000/66/000/000/0062/0063

ACC NR: AT6036496

AUTHOR: Benevolenskaya, T. V.; Boykova, O. I.; Korotayev, M. M.; Mikhalylovskiy, G. P.; Savilov, A. A.

ORG: none

TITLE: Use of dosed physical exercise in diagnosing changes in the functional state of the cardiovascular system [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 62-63

TOPIC TAGS: space medicine, diagnostic medicine, cardiovascular system, cosmonaut. training, physical exercise, cardiology

ABSTRACT: Exercise tests are valuable for examination of cosmonauts because they uncover latent pathological changes in cardiovascular function. Many of the subjects of this study were unaccustomed to sport or exercise, so it was necessary to demonstrate their adaptability to physical exercise. Physical exercise consisted of a single and double Master test — twenty deep-knee-bends in 30 sec — and work on a bicycle ergometer. Master's test is valuable because it permits dosing the exercise depending on the subjects' age and weight and makes evaluation of myocardiac

Card 1/3

ACC NR: AT6036496

function during exercise possible. However, electrocardiograms cannot be recorded in the usual manner during this test. For this reason the supplementary test on the bicycle ergometer was used. The optimum physical exercise of 1000 kg-m per min was performed for 5 min. Tests (160 in all) were administered in the morning after preliminary training the night before. EKG's, phonocardiograms, sphygmograms, and blood pressure readings were taken before and after the test, and at one-minute intervals during the test.

Experimental results showed the following physiological shifts in healthy people: 1) pulse rate increased 100—120% from initial levels, 2) systolic pressure increased to 200 mm, 3) diastolic pressure varied up to 10 mm in either direction, 4) the T'-spike of the EKG decreased and subsequently increased, and 5) the ST interval underwent a slight shift. Decreases in the length of the isometric contraction pause, the period of expulsion, and the mechanical system were noted, together with increases in the intrasystolic index and the rate of increase in intraventricular pressure. In addition, the percentage of oxygenation changed slightly. In some subjects there were indications of insufficient cardiac-muscle, nourishment, appearing chiefly in the aftereffect

Cord 2/3

ACC NR: AT6036496

period: the ST interval shifted, some two-phase or inverted T-spikes were noted, and migration of rhythm occurred.

Tests on the bicycle ergometer also demonstrated the insufficient adaptability of the cardiovascular system to physical exercise: 1) pulse rate increased 200%, 2) diastolic pressure increased 30 mm, 3) a long aftereffect period was noted, and 4) extrasystole occurred. In some subjects the isometric contraction phase increased. The T-spike of the EKG changed slightly.

Inclusion of these tests in the regular examination of aviation personnel and cosmonauts is recommended because of the possibility of dosing exercises and recording a number of electrophysiological parameters during exercise, but also because of the large percentage of pathological cardiovascular changes uncovered in apparently healthy people during work on the ergometer. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 05 / SUBM DATE: 00May66

Card 3/3

ACC NR: AT6036557

SOURCE CODE: UR/0000/66/000/000/0161/0162

AUTHOR: Yegorov, P. I.; ~~Benevolenskaya, T. V.~~; Korotayev, M. M.; Reutova, M. B.;
Filatova, L. M.; Tsyganova, N. I.

ORG: none

TITLE: The functional state of several internal organs during exposure to radial and coriolis accelerations during multi-day experiments in a slowly rotating room
[Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 161-162

TOPIC TAGS: biologic acceleration effect, coriolis acceleration, biologic metabolism, blood chemistry, immunology, biologic secretion

ABSTRACT: Six healthy subjects aged 27-36 and resistant to vestibular stimuli were clinically examined before and after studies in a slowly rotating MVK room. A detailed physical examination of internal organs was conducted along with special clinical, biochemical, and immunobiological examinations of the functional condition of these organs.

The experiment resulted in substantial changes in the functional state of

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ACC NR: AT6036557

a number of organs and systems. These changes were a function of rotation rate and duration of exposure. At a rate of 40° /sec in a three-day experiment, the following changes were noted: hypoglycemia and inadequate reaction of beta cells of the pancreas to insulin secretion; a sharp increase in blood potassium level and decreased kidney filtration function; increased liver bilirubin secretion; a trend towards increased blood creatinine, protein, hemoglobin, erythrocyte, and leukocyte level; change in the value, flexibility, and type of oculocardiac reflex; increased blood cholinesterase activity; and a sharp decrease in blood properdin.

At a rate of 10° /sec in a seven-day experiment, the following changes were noted: lowered EKG T-spike from all leads, decline in the adaptability of the cardiovascular system to physical exercise, intensified oculocardiac reflex, increased blood calcium and decreased potassium, decreased blood cholinesterase activity, and increased blood properdin. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

C.A. GENEVOLENSKAYA, Yu. A.

7

*Formazan method of determining zinc with an out-
come indicator. D. N. Finkel'shteyn and Yu. A. Bep-
volodskiy (V. V. Vokhrovskiy Mining Inst., Sverdlovsk).
Zashchita Lab. 10, 807-12 (1980).—The titration of Zn by
 $K_2Fe(CN)_6$ does not proceed by a strictly stoichiometric re-
action; hence, all conditions must be rigorously standard-
ized. For constancy of results it is advisable to use a
variable; size of the soln. as obtained by analysis carried out
on known samples of varying size. The best analytical re-
sults are obtained when the ppt. is least hydrated and most
rapidly coagulated. Temp. of 40°, presence of NH_4Cl
(best 1.75 M), absence of Cu or of much Al, as well as of
Cd, and pH about 1.1-1.2 give best results. G. M. K.*

BC

12-3

Condensation of polyethylene with acid anhydride
 a variety of polyethylene anhydrides. G. V. Zhuravskiy
 and V. I. Zhuravskiy, Zh. Obshch. Khim., 1974, 48, 1074
 and Zh. Obshch. Khim., 1974, 48, 1075. The authors
 describe the synthesis of polyethylene anhydrides from
 polyethylene and acid anhydrides. The polyethylene
 anhydride, $\text{C}_{10}\text{H}_{16}\text{O}_4$, of high purity is obtained
 directly from polyethylene. R. T.

ASB-364 METALLURGICAL LITERATURE CLASSIFICATION

EDUC STG 1570

EDUC STG 1570

EDUC STG 1570

EDUC STG 1570

SYNTHESIS AND PROPERTIES NOTES

Syntheses in the field of antineoplastic substances. (Dihydroxyaminomethyl)amine derivatives of the benzothiazine series. I. I. Kuznetsov and Z. V. Il'movskaya, *J. Gen. Chem.* (U. S. S. R.), 7, 2471-7 (1937); cf. Berkenbren, *C. A.* 31, 1779. 3-Nitro-4-acetaminomethylamide and P₂S₅ give 3-nitro-6-thioacetaminomethylamide (I) m. 101-2°. When I is boiled with acid or alkali, S is split off hydrolytically. When I is oxidized with K₂Fe(CN)₆, it forms 6-methoxy-3-nitro-3-methylbenzothiazole m. 119-60°. With SnCl₄ and HCl, this is reduced to the corresponding aniline m. 85-6°. (HCl salt m. 216-16°), which reacts with H₂N(CH₂)₄Cl HCl (II) to give 6-methoxy-7-(γ-diethoxyaminopropylamino)-3-methylbenzothiazole (III), b. 249-10° (HCl salt m. 185-7°). Methoxy-6-aminomethylamide and HClOH give 3-nitro-6-formaminomethylamide, m. 120-1°, which with P₂S₅ gives 3-nitro-6-thioformaminomethylamide, m. 120-2°. This is hydrolyzed by HCl but not by alkali. It is not oxidized by K₂Fe(CN)₆ and so cannot be used to obtain a benzothiazine deriv. 3-Nitro-4-aminomethylamide and (CO₂H)₂ give 6-methoxy-6-nitrobenzothiazole, m. 187°, which with P₂S₅ gives 6-methoxy-6-nitrobenzothiazole, m. 187°. Napier, gives the acid, m. 142°, which is oxidized by K₂Fe(CN)₆ to 6-methoxy-7-nitrobenzothiazole-2-carboxylic acid. When this is heated with HCl it gives 6-methoxy-7-nitrobenzothiazole, m. 151°. The corresponding amine, m. 150° (HCl salt, m. 244-4°), is obtained by reduction and in turn unites with II to form 6-methoxy-7-(γ-diethoxyaminopropylamino)benzothiazole, b. 215-18° (IV). Although III and IV clearly resemble their quinoline analogs in chem. and phys. properties, they have no antineoplastic action. H. M. L.

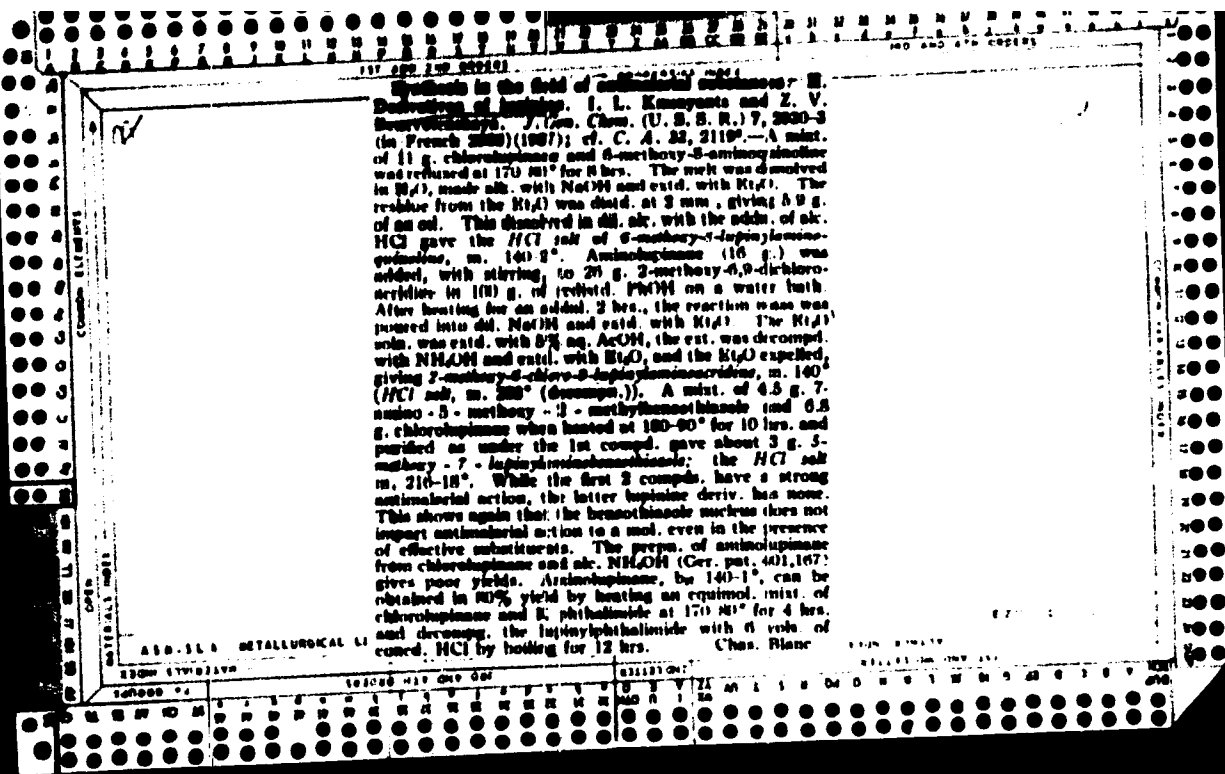
ASD-35A METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

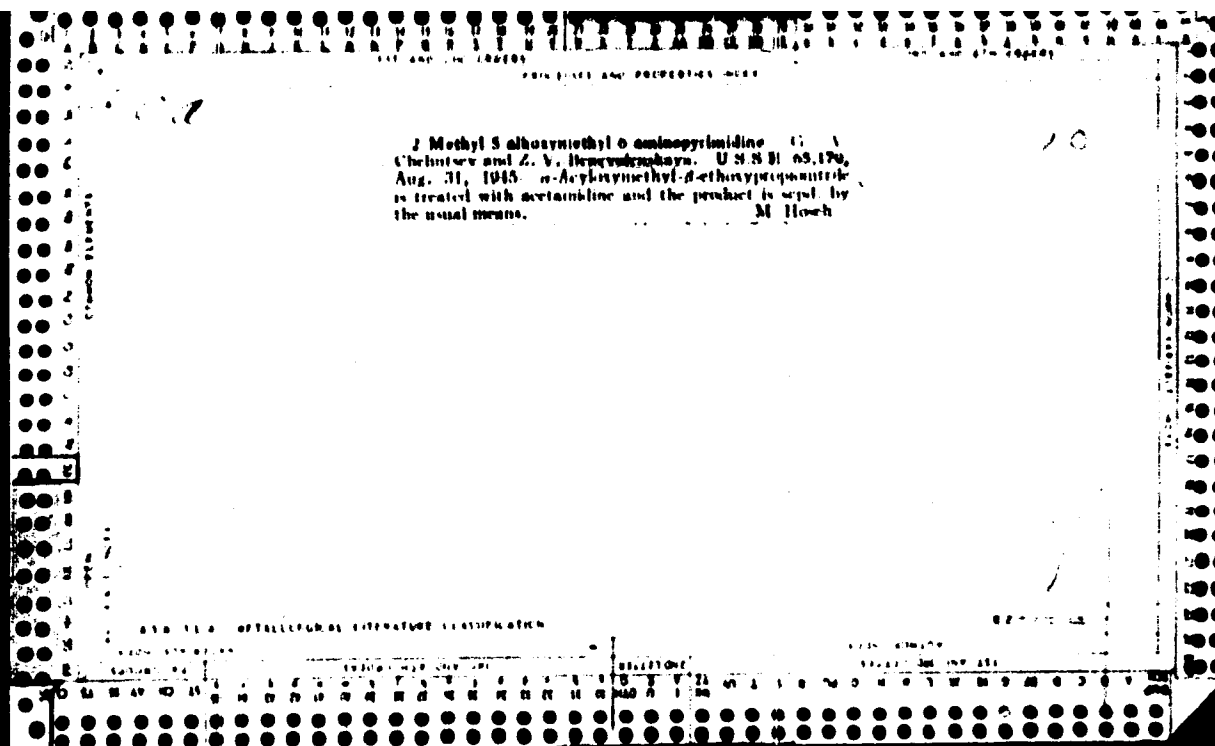
DATE

BY

REMARKS



The synthesis of new antimalarial substances—acridine derivatives. I. L. Kanyanov and Z. V. Berezinskaya. <i>J. Gen. Chem.</i> (U. S. S. R.) 55: 1444-1447 (1981) and in $\text{C}_6\text{H}_5\text{N}_2\text{CO}_2\text{K}$ (40 g.), 35 g. $3,4\text{-O}(\text{N}(\text{H}_2\text{N})\text{C}_6\text{H}_4\text{N}_2\text{H})$, 20 g. K_2CO_3, 5 g. Cu bronze and 3 g. KI were refluxed (air condenser) in an oil bath at $130-135^\circ$ for 2 hrs. The resulting red mass was twice extd. with 300 cc. boiling Me_2CO. The insol. residue was boiled with water and filtered while hot. The residue on a filter paper (K salt of the acid formed) was suspended in water and treated with dil. HCl. The total yield of 2-methoxy-3'-nitro-6-chlorodiphenylamine-2-carboxylic acid (I), m. $300-0^\circ$, was 81%. A mixt. of 20 g. I and 100 cc. POCl_3 was heated in a oil bath at $120-130^\circ$ for 4-5 hrs. The excess of POCl_3 was distd. and the residue was poured into 10% NH_4OH ice. The ppt. was filtered, washed with water, dried and recrystd. from abs. C_6H_6. The yield of 2-methoxy-6-nitro-6,8-dichloroacridine (II), m. $372-3^\circ$, was 80-85%. Heating II with a large excess of PhOH at 80° for 40 min., followed by the removal of PhOH and treatment of the reaction mixt. with a large amt. of ether and then with dil. NaOH, yielded 80-90% 2-methoxy-6-nitro-6-chloro-6-phenoxyacridine (III), m. $221-2^\circ$. A mixt. of 3 g. III and 4.5 g. $\text{Me-CH}(\text{NH}_2)(\text{CH}_3)_2\text{NEt}$ was heated at $120-130^\circ$ for 1 hr. The reaction mixt. was treated with dil. AcOH, filtered out and the filtrate was neutralized with NaOH. The yield of 2-methoxy-6-nitro-6-chloro-6-[(6-diethylamino-α-methylbutylamino)acridine (IV), "nitro-acridine," was 70%. A soln. of 10 g. IV in 70 cc. HCl (d. 1.19) was slowly treated with 30 cc. NaCl in 60 cc. HCl. The mixt. was set aside for 1 hr., cooled and the ppt. was filtered out, dissolved in water and treated with a		large excess of NaOH soln. The sepd. liq. was extd. with ether and the ext. was dried with K_2CO_3. The ext. was neutralized with HCl in ether while running and the ppt. formed was filtered out and washed with dry ether and recrystd. from alc., yielding 2-methoxy-6-amino-6-chloro-6-[(6-diethylamino-α-methylbutylamino)acridine - HCl (V), m. $245-7^\circ$. The ether soln. of the base prepd. from V (5 g.) was dried with anhyd. K_2CO_3, filtered and the ether was distd. (finally <i>in vacuo</i>). The residue was mixed with 3 g. $\text{CH}_2\text{Cl}(\text{CH}_2)_2\text{NEt}_2\text{HCl}$ and heated in an oil bath at $120-140^\circ$ for 2 hrs. and at $150-160^\circ$ for 3 hrs. The reaction mixt. was dissolved in hot water, decanted with alkali and extd. with ether. The ext. was treated with HCl in ether. The resulting 2-methoxy-6-(γ-diethylaminopropylamino)-6-chloro-6-[(6-diethylamino-α-methylbutylamino)acridine - HCl (VI), m. $181-4^\circ$, sol. in water and alc. and not very sol. in Me_2CO, C_6H_6, and petr. ether, is hygroscopic. The antimalarial effect of IV was very weak, whereas V and VI were not active at all. Conclusions. Introduction of a NO_2 group into the 6-position of the above anal. decreased the antimalarial effect and NH_2 and diethylaminomethylamino groups (in the same position) destroyed this effect entirely. A. A. P.	
ASD-51A METALLURGICAL LITERATURE CLASSIFICATION		3000 500100	



BENEVOLENSKAYA, Z. V. Cand. Chem. Sci.

Dissertation: "New Synthesis of Vitamin B." Inst of Organic Chemistry,
Acad Sci USSR, 30 Jan 47.

SO: Vechernyaya Moskva, Jan, 1947 (Project #17836)

Alkylation of ethylene cyanohydrin by carboxylic esters. O. V. Chelintsev, Z. V. Pervysheva, and B. M. Dubinin (Vys. Chem. Ind., Acad. Sci. USSR), J. Gen. Chem. (U.S.S.R.) 17, 289-72 (1947) (in Russian).— HOCH₂CH₂CN (I) is readily alkylated at the O atom on treatment with carboxylic esters in the presence of alcoholates. The reaction was discovered accidentally when, in an attempt to form HOCH₂CH(CN)COOEt, EtOCH₂CH₂CN and I were mixed in the presence of EtONa and yielded HOCH₂CH₂CN (II) and NaOCH₂CH₂CN. The reaction proceeds well in Et₂O, benzene, or EtOH. EtONa (from 5 g. Na and 11 g. EtOH) in 100 cc. abs. Et₂O was treated with cooling and stirring with 14 g. I and 18 g. EtOCH₂CH₂CN, stirred after 24 hrs., and the filtrate washed, dried, and distilled, giving 70% II, b. 171°, d. 0.85. From EtONa (from 1.98 g. Na and 30 cc. abs. EtOH) treated dropwise with cooling and stirring with 6 g. I and 7.8 g. EtOCH₂CH₂CN, stirred 1 hr., and heated briefly was obtained 75% II. EtONa (from 5.4 g. Na and 12 g. EtOH) in 75 cc. C₆H₆ slowly treated (0.5 hr.) with 22.5 g. EtOCH₂CH₂CN and then dropwise with 15 g. I, washed after 12 hrs. with water, and the org. layer dried., yielded 65% II. Reversal of the order of addition gave a 71.5% yield. EtONa from 3.7 g. Na and 10 g. EtOH in 70 cc. benzene, treated with 18 g. I and after 1 hr., with 23 g. EtOCH₂CH₂CN, yielded after 24 hrs. 80% II; when EtOCH₂CH₂CN was replaced by 15 g. EtOCH₂CH₂CN, and the mixt. heated 40 min. to 80°, there was obtained 10% II. NaOEt (9.6 g.) in Et₂O treated with 28 g. HCONH₂ and 10 g. I and stirred 12 hrs. gave 4.3 g. II; the distn. residue was PhNH₂. NaOEt (9.6 g.) in Et₂O treated dropwise		with 10 g. I and 8.45 g. MeOCH₂CH₂CN, stirred 3 hrs., and let stand 12 hrs., gave a mixt. of II and MeOCH₂CH₂CN, b. 165-75°. To NaOMe, from 3.8 g. Na and 7 g. MeOMe, in 70 cc. benzene was added 10 g. I, followed by 6 g. MeOCH₂CH₂CN; after 3 hrs. stirring and standing overnight, the mixt. was washed with water and the org. layer dried, to give 70% MeOCH₂CH₂CN, b. 165°. To NaOCH₂Ph, from 3.9 g. Na and 15 g. PhCH₂OH, in 75 cc. benzene was added 8 g. I followed by 23 g. AcOCH₂Ph and the mixt. was heated to 40-50° 1 hr.; filtration and washing of the filtrate with water gave 55.5% PhCH₂OCH₂CH₂CN, b. 165-7°. EtONa in the above expt. gave 63% HOCH₂CH₂CN. EtONa (from 3.6 g. Na and 13 g. EtOH) in 70 cc. benzene and 10 g. I, treated after 1 hr. slowly (40 min.) with 20 g. BuOCH₂CH₂CN, stirred 2 hrs., and allowed to stand overnight, yielded 78% BuOCH₂CH₂CN, b. 85°. EtONa from 3.7 g. Na and 9 g. EtOH in 65 cc. C₆H₆ treated with 10 g. I, followed after 1 hr. by 16 g. EtOAc, and heated to 80° 1 hr. yielded 63% II. The alcoholate from 2.7 g. Na and 16 g. EtNCH₂CH₂OH in 70 cc. benzene treated with 9 g. I, then, after 1 hr., with 10 g. EtNCH₂CH₂OAc, and washed with water after 24 hrs. gave 9 g. EtNCH₂CH₂OCH₂CH₂CN, b. 130-40°. EtONa, from 2 g. Na and 4 g. EtOH, in 100 cc. Et₂O treated with cooling and stirring with 6.3 g. I and 12.7 g. (CO₂Et), and filtered after 3 hrs. gave 70% II.
U.S. 516 METALLURGICAL LITERATURE CLASSIFICATION		

BENEVOLENSKAYA, Z. V.

USSR/Chemistry - Acylenols
Chemistry - Pyrimidine

Feb 1947

"Some 'Acylenols'," G. V. Chelintsev, E. M. Dubinin, Z. V. Benevolenskaya, 5 pp

"Zhur Obshch Khim" Vol XVII, No 2 p. 277

Methods of obtaining 'acylenols' (stable substances derived in pure form, readily obtainable and useful for various syntheses) and their use in the synthesis of pyrimidine compounds.

PA 15T43

BENEVOLENSKIY, A. (g.Ivanovo)

Secrets of the moon craters. Tekh.mol. 29 no.8:34-35 '61.
(Moon, Theory of) (MIRA 14:11)

BENEVOLENSKIY, A.M.

Benevolenskiy, A.M. "The influence of blood letting on the arterial blood pressure of donors", *Perelivaniye Krovi*, Collection 3, (Ivanovo), 1948, p. 158-61

SO: U-3042, 11 March 53 (Letopis 'zhurnal 'nykh Statey No. 7, 1949)

BERNOLINSKIY, A.M.

Psychopathologic modifications in Itsenko's disease. Nevropat. psikiat.,
Moskva 20 no.5:74-76 Sept-Oct 51. (CLML 21:4)

1. Of the Department of Psychiatry (Acting Head--Docent G.I. Plessee),
Ivanovo Medical Institute. 2. Basophilic pituitrium.

BEKHVOLNISKIY, A.M. (Ivanov)

Improved apparatus for measuring cerebrospinal fluid pressure in the subarachnoid space. Vop.neirokhir. 23 no.1:51 '59. (MIRA 12:3)

1. In oblastnogo gosпиталя dlya invalidov Otechestvennoy voyny.

(CEREBROSPINAL FLUID,

pressure measurement in subarachnoid space, appar. (Rus))

(SUBARACHNOID SPACE,

measurement of CSF pressure in subarachnoid space,
appar. (Rus))

(MANOMETERS,

for measurement of CSF pressure in subarachnoid
space (Rus))

L 08078-67 EWT(1)/EWP(e)/EWT(m)/EWP(t)/ETI IJP(n) JD/WJ/JG/JR/GX/JH
ACC NR: ATG034108 (A) SOURCE CODE: UR/0009/66/021/004/0319/0321 27

AUTHOR: Bulkin, Yu. M.; Zhirnov, A. D.; Konstantinov, L. V.; Nikolayev, V. A.; Sten-
bok, I. A.; Lobanov, V. S.; Benevolenskiy, A. M. 37
56
B

ORG: none

TITLE: RG-1 reactor for geological research

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 319-321

TOPIC TAGS: thermal reactor, research reactor, geologic research facility, tracer
study, radioactive source/ RG-1 research reactor

ABSTRACT: The reactor described is of the swimming-pool type rated at 5 kw thermal. It is intended for the production of radioactive isotopes with different half-lives, for activation analysis of technological and geological samples, and for estimates of the absorbing abilities of solid and liquid materials and alloys, and also for use in conjunction with a group of laboratories (radiochemical laboratory, laboratory for exact radiometric measurements, and other specialized facilities) for the development of new engineering and technical research methods using radioactive isotopes. The fuel is UO_2 (10% enrichment) and the critical load is 2.6 kg of U^{235} . The reflector is made of graphite blocks clad in aluminum. The core and reflector are placed in a water-filled aluminum tank (1500 mm dia, 3500 mm high). Boron steel control rods are used. There are altogether seven different channels located in areas with different thermal and fast neutron flux densities (up to 10^{11} neut/cm²-sec). The maximum pro-

Card 1/2

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ACC-NR: AF6034108

ductivity reaches 2600 millicurie when 8 standard ampoules with K_2O , are used (maximum 400 mCu in one ampoule). The auxiliary equipment used to handle the radioactive material and to control the reactor are briefly described. Orig. art. has: 2 figures.

SUB CODE: 18, 08/ SUM DATE: 00 / ATD PRESS: 5102.

nuclear metallurgy

Cord

2/2

35779

3.2500

S/556/62/000/030/002/005
D218/D308

AUTHOR: Benevolenskiy, A. M.

TITLE: The role of cumulative processes in the formation of
lunar mountain rings

SOURCE: Vsesoyuznoye astronomo - geodezicheskoye obshchestvo.
Byulleten'. no. 30 (37). Moscow, 1962, 20-27

TEXT: The origin of mountain rings which are a striking feature of the lunar surface, has not received a generally accepted explanation. The aim of this work was to elucidate the possible role of cumulative processes with the aid of lunar craters produced by special modelling apparatus in the laboratory. The models were obtained by dropping solid bodies on to a viscous material at the instance of its solidification, using a cumulation principle. Thus, a drop hitting the surface of the liquid after falling from a height of 25 to 30 cm produces a depression on the surface, the liquid then rushes back into the depression in order to fill it, and this produces a 'splash' at the center of the depression with.

Card 1/3

The role of cumulative ...

S/556/62/020/030/002/005
D218/D308

the result that a droplet is ejected in the upward direction with a considerable velocity. Tar, cement, and gypsum were used as the viscous medium and the solids were in the form of pieces of metal or stone. The main difficulty was in estimating when the viscous material was on the point of solidification. Special devices were constructed so that these artificial craters could be produced both in air and in vacuum. The models were very nearly identical in appearance with the well-known lunar surface features. These experiments are said to suggest the following hypothesis: The lunar craters and mountain rings were produced at an early stage when the lunar surface was on the point of solidification. Meteorites reaching the surface with cosmic velocities produced cumulative phenomena of the above type (circular mountain formations with central peaks). The absence of an atmosphere and water on the moon ensured that these early formations have retained their form... This has also been facilitated by the low gravitational attraction. The volcanic activity reported by Kozyrev (Priroda, no. 3, 1959) is sporadic and occurs in the central regions of the lunar craters where the crust is apparently thinner as a result of meteorite

Card 2/3

The role of cumulative ...

S/556/62/000/030/002/005
D218/D308

impacts giving rise to cumulative effects and ejections. There are 6 figures and 1 table.

ASSOCIATION: Moskovskoye otdeleniye VAGO (Moscow Division of VAGO)

SUBMITTED: October, 1960

Card 3/3

L 000/8-07 EWT(1)/EMP(●)/EWT(M)/EMP(t)/ETI IJP(c) JD/WJ/JG/JR/GH/JH
 ACC NR: AT6034108 (A) SOURCE CODE: UR/0089/66/021/004/0319/0321

AUTHOR: Bulkin, Yu. M.; Zhirnov, A. D.; Konstantinov, L. V.; Nikolayev, V. A.; Sten-
 bok, I. A.; Lobanov, V. S.; Benevolenskiy, A. M.

ORG: none

TITLE: RG-1 reactor for geological research

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 319-321

TOPIC TAGS: thermal reactor, research reactor, geologic research facility, tracer
 study, radioactive source/ RG-1 research reactor

ABSTRACT: The reactor described is of the swimming-pool type rated at 5 kw thermal. It is intended for the production of radioactive isotopes with different half-lives, for activation analysis of technological and geological samples, and for estimates of the absorbing abilities of solid and liquid materials and alloys, and also for use in conjunction with a group of laboratories (radiochemical laboratory, laboratory for exact radiometric measurements, and other specialized facilities) for the development of new engineering and technical research methods using radioactive isotopes. The fuel is UO₂ (10% enrichment) and the critical load is 2.6 kg of U²³⁵. The reflector is made of graphite blocks clad in aluminum. The core and reflector are placed in a water-filled aluminum tank (1500 mm dia, 3500 mm high). Boron steel control rods are used. There are altogether seven different channels located in areas with different thermal and fast neutron flux densities (up to 10¹¹ neut/cm²-sec). The maximum pro-

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ACC NR: AI6034108

ductivity reaches 2600 millicurie when 8 standard ampoules with $KMnO_4$ are used (maximum 400 mCu in one ampoule). The auxiliary equipment used to handle the radioactive material and to control the reactor are briefly described. Orig. art. has: 2 figures.

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